ABSTRACT OF THE DISCLOSURE

A method and resulting formed device are disclosed wherein the method combines polysilicon surface-micromachining with metal electroplating technology to achieve a capacitively-driven, lateral micromechanical resonator with submicron electrode-to-resonator capacitor gaps. Briefly, surface-micromachining is used to achieve the structural material for a resonator, while conformal metal-plating is used to implement capacitive transducer electrodes. This technology makes possible a variety of new resonator configurations, including disk resonators and lateral clamped-clamped and free-free flexural resonators, all with significant frequency and Q advantages over vertical resonators. In addition, this technology introduces metal electrodes, which greatly reduces the series resistance in electrode interconnects, thus, minimizing Q-loading effects while increasing the power handling ability of micromechanical resonators.